

SWIFT-nanoLV Avionics Platform, Phase I

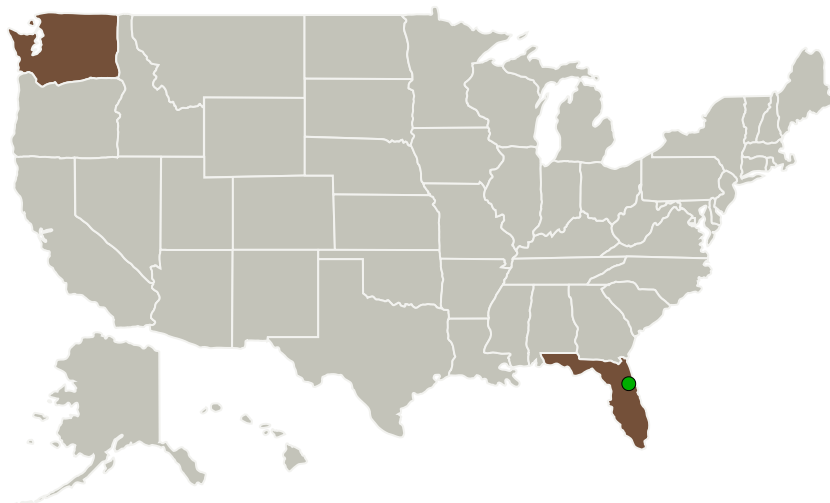
Completed Technology Project (2013 - 2013)



Project Introduction

With the increased demand for and utility of nano- and micro-satellites, the demand for responsive, low-cost access to space has also increased. To meet this demand, multiple private companies are pursuing the development of nano- and micro-launch vehicles (NMLV). However, NMLV builders lack suitable avionics platforms for both development and operational needs. Traditional launch vehicle avionics platforms exceed the SWaP requirements of an NMLV due to their use of redundant, aerospace grade components. To service the needs of NMLV builders, TUI proposes to develop the SWIFT-nanoLV avionics platform by leveraging its existing portfolio of SWIFT software-defined radios and other small satellite component technologies. Through the careful use of COTS components, modular design techniques, and software-defined architectures, the SWIFT-nanoLV avionics platform will not only meet the SWaP requirements of an NMLV, but will also help minimize the operating costs of NMLVs. After developing a concept design and testing brassboard prototypes in the Phase I effort, TUI will build and test a fully functional avionics platform in the Phase II effort.

Primary U.S. Work Locations and Key Partners



SWIFT-nanoLV Avionics Platform

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| Organizations Performing Work | Role | Type | Location |
|-------------------------------|-------------------------|-------------|-------------------------------|
| Tethers Unlimited Inc | Lead Organization | Industry | |
| ● Kennedy Space Center(KSC) | Supporting Organization | NASA Center | Kennedy Space Center, Florida |

| Primary U.S. Work Locations | |
|-----------------------------|------------|
| Florida | Washington |

Project Transitions

▶ **May 2013:** Project Start

✓ **November 2013:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/137306>)

Images



Project Image

SWIFT-nanoLV Avionics Platform
(<https://techport.nasa.gov/image/129315>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Tethers Unlimited Inc

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

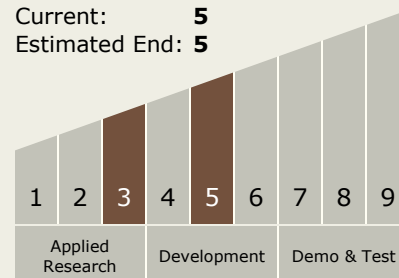
Carlos Torrez

Principal Investigator:

Nestor Voronka

Technology Maturity (TRL)

Start: 3
Current: 5
Estimated End: 5



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Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.2 Electronics

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System